Total Records of Velvet Longhorn Beetle *Trichoferus campestris* Faldermann (Coleoptera, Cerambycidae) from Utah

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Introduction

The velvet longhorn beetle (Trichoferus campestris Faldermann) is a potential threat to Utah's urban, orchard, and riparian wood land areas. Field sampling and actions taken in association with the detection efforts by the Utah Department of Agriculture and Food (UDAF) are necessary to maintain productive commercial tree fruit production, and healthy urban forests. Expanded detection trapping along natural waterways and orchards indicate that the velvet longhorn beetle (VLB) distribution, first discovered in South Salt Lake City in July 2010, is widespread in Salt Lake and Utah counties. The insect was first detected in North America in the province of Quebec, Canada in 2002 and 2006 (Grebennifov et al. 2010). The VLB has been found in warehouse settings in Ohio (2009), Rhode Island (2006), New Jersey (2007, 2013), and Illinois (2009) (Blackwood 2010), it has also been detected in Colorado (2013), and New York (2014). It spreads into new areas through infested wood packing material that accompanies a wide variety of imported commodities such as: building supplies, machinery, tools, glass, tiles, etc. (Cavey 1998). Published reports from the European Plant Protection Organization, CABI and Global Pest Disease Database have been summarized in the USDA-APHIS-National Identification Services Plant Pest Risk Assessment (1998). The conclusion of this literature review is that VLB is polyphagous and prefers to attack apple (Malus), and mulberry (Morus) in its native range. In Utah, VLB larva, pupae, and adult life stages have been recovered though destructive sampling from peach and cherry (Prunus). See Table 2 for a complete list of hosts.

Description

The adult is 11–20 mm long, with an elongated body and parallel-sided elytra (Photo 1). The elytra, legs and other parts of the body vary in color from dark brown to brownish-orange, with the legs and antennae – usually being lighter - Photo 3). It is easily recognized by the irregularly distributed hairs on the elytra, which form spots (Kostin 1973). Mature larvae are 22 mm long, yellow-white in color, and have a brown head (Photo 2).

Photo 2: Larva Life Stage

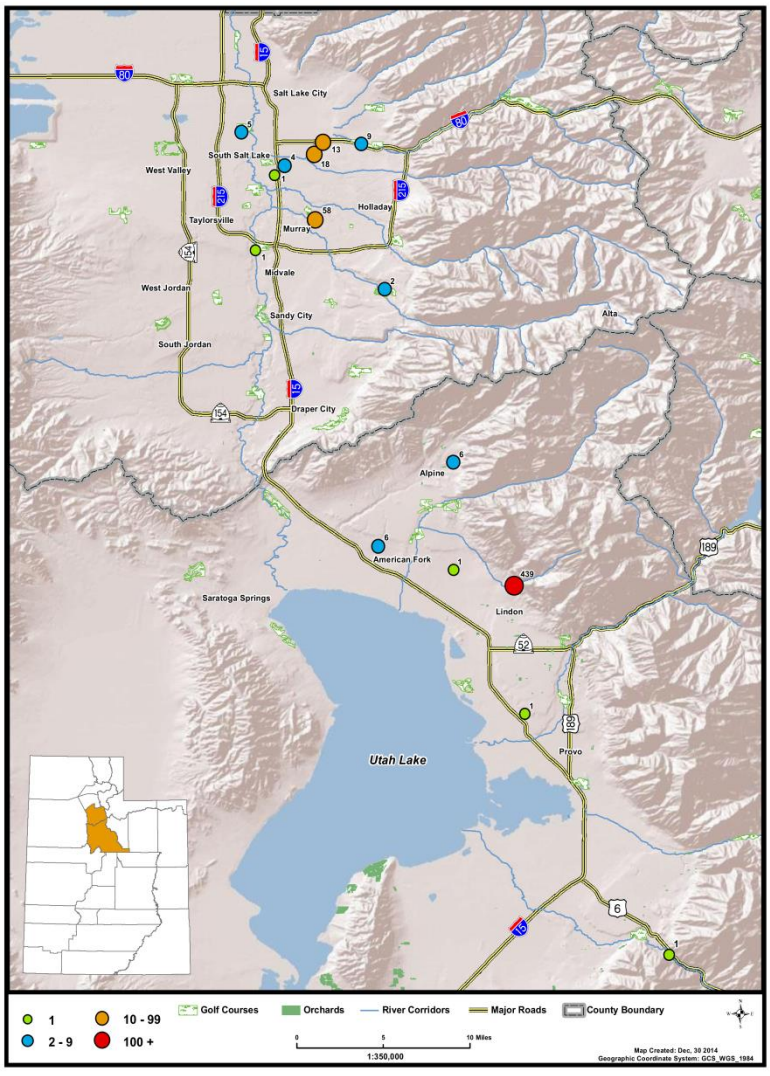
Photo 3: Newly Emerged Adult Life Stage Next to Pupal Chamber

Surveillance and Monitoring Activities

UDAF continues to gather information on the distribution of *Trichoferus campestris* in Utah. To date 565 adult specimens of this exotic wood borer have been collected from 15 sites, in two Utah counties. The sites where this beetle have been detected are orchards, riparian areas (golf courses), and industrial sites. Ongoing research and development must continue in effort to understand the biology of the insect and risk that the pest imposes socially, environmentally and economically. Currently, Otis laboratory is in the process of trying to establish a colony for further research. The exotic wood borer survey was completed as a cooperative project by UDAF with funding from USDA APHIS PPQ.

Year	2010	2011	2012	2013	2014
Totals	4	0	11	142	408

Table 1: Number of Adult Beetles Collected by Year



Biology and Behavior

In Utah, its known distribution runs from central Salt Lake County to central Utah County. It occurs in high densities near hygienic cull piles found in commercial fruit production areas and near riparian habitat associated with golf courses. The adult form is nocturnal and emerges for flight in mid-spring (April–May) (Spears 2014). It is attracted to Lindgren funnel traps baited with ethanol lure (Table 3). Living hosts are fruit trees (Table 3). Live beetles were recovered from sleeve cages placed on cherry and peach trees (Table 3). See Table 1 for a complete list of hosts.

It is unknown whether the insect prefers healthy or stressed trees; however, it seems to favor hosts that are medium to large sized. Larvae develop under the bark and then in the wood. The insect is a pest of construction materials often infesting the timber, lumber, and dry wood (Kostin 1973). Infested trees display thinning crown, frass deposits at the base of the tree, epicormic shoots, and exit holes on the trunk and main branches (Photo 3). VLB infestation may have an impact on fruit yield, wood marketability, and tree longevity (Spears 2014).

Photo 1: Adult Life Stage

Photo 4: Adult Emergence Holes

Outreach

UDAF conducts outreach focused on exotic wood borers and their potential impact to Utah's urban, orchard, and riparian wood land areas. Information specific to the recent monitoring programs to detect early introductions of *Trichoferus campestris* has been presented to the following groups: Utah Fruit Growers Association, Golf Course Superintendents Association (Salt Lake County), Utah Nursery and Landscape Association, Utah Horticultural Association, Utah Fruit Growers Association, and municipal urban foresters.

Betula spp. (Birch)
Broussonetia spp. (Paper mulberry)
Gleditsia spp. (Honeylocust)
Malus spp. (Apple/Crabapple) [preferred host]
Morus spp. (Mulberry) [preferred host]
Picea spp. (Spruce)
Pinus spp. (Pine)
Salix spp. (Willow)
Sorbus spp. (Mountain-ash, rowan)
Prunus spp. (cherry, peach)

Table 2: Living Hosts

Trap Type	Year	Totals
Lindgren Funnel Trap	2010	4
Lindgren Funnel Trap	2012	11
Lindgren Funnel Trap	2013	142
Lindgren Funnel Trap	2014	286
Cross Vane Panel Trap	2014	107
Sleeve Collection	2014	8
Light Trap	2014	3
Visual Survey	2014	1
Rearing Cage Collection	2014	1
Japanese Beetle Trap	2014	1
Gypsy Moth Delta Trap	2014	1

Table 3: Number of Adult Beetles by Collection Method per Year

Citations:

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Kostin, I.A. (1973). The Dendrophagous beetles of Kazakhstan (Buprestidae, Cerambycidae, Ipidae). Nauka, Alma-Ata, 286 pp. (In Russian.) Translation by Marina Zlotina (PPQ-CPHST Risk Analyst and Entomologist), April 22, 2011, Translation of page 162 of Kostin, I.A. (1973).

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Photos taken by UDAF entomology staff members.